

FEATURES

- High quantum efficiency: GaAsP / GaAs photocathode
- Built-in thermoelectric cooler
- Low noise



▲H16722 + A7423 (Heatsink with Fan)

SPECIFICATIONS

(at +25 °C)

Parameter			H16722-40	H16722P-40	H16722-50	H16722P-50	Unit	
Input voltage			+11.5 to +15.5				V	
Max. input voltage for main unit			+18				V	
Max. input current for main unit ①			30				mA	
Max. input voltage for thermoelectric cooler			2.6				V	
Max. input current for thermoelectric cooler			2.2				A	
Max. output signal current			40				μA	
Max. control voltage			+0.9 (Input impedance 100 kΩ)				V	
Recommended control voltage adjustment range			+0.5 to +0.8				V	
Effective area			φ5				mm	
Photocathode material			GaAsP		GaAs		—	
Spectral response			300 to 740		380 to 900		nm	
Peak sensitivity wavelength			520		630		nm	
Cathode	Quantum efficiency	at peak quantum efficiency wavelength	Min.	40	14		%	
			Typ.	45	19			
	at 800 nm	Min.	—	11				
		Typ.	—	15				
Radiant sensitivity	at peak quantum efficiency wavelength	Min.	168	70		mA/W		
		Typ.	189	95				
	at 800 nm	Min.	—	71				
		Typ.	—	97				
Anode	Radiant sensitivity	at peak quantum efficiency wavelength	Min.	1.0 × 10 ⁵ ②	1.7 × 10 ⁵ ④	4.2 × 10 ⁴ ②	7.0 × 10 ⁴ ④	A/W
			Typ.	1.9 × 10 ⁵ ②	3.8 × 10 ⁵ ④	9.5 × 10 ⁴ ②	1.9 × 10 ⁵ ④	
		at 800 nm	Min.	—	—	4.3 × 10 ⁴	7.1 × 10 ⁴	
			Typ.	—	—	9.7 × 10 ⁴	1.9 × 10 ⁵	
	Dark current ②③	Typ.	0.4	—	0.5	—	nA	
		Max.	1.0	—	1.3	—		
	Dark count ③④	Typ.	—	100	—	125	s ⁻¹	
		Max.	—	300	—	375		
Gain ②	Typ.	1.0 × 10 ⁶	2.0 × 10 ⁶	1.0 × 10 ⁶	2.0 × 10 ⁶	—		
Rise time ②	Typ.	1.0				ns		
Ripple noise ②⑤ (peak to peak)	Max.	0.6				mV		
Settling time ⑥	Typ.	0.2				s		
Operating ambient temperature ⑦	+5 to +35						°C	
Storage temperature ⑦	-20 to +50						°C	
Weight	Approx. 453						g	

① At +15 V input voltage and +0.8 V control voltage in darkness

② Control voltage = +0.8 V

③ After 30 min storage in darkness, PMT setting temperature 0 °C, used with C8137-02 and A7423

④ Plateau voltage = control voltage

⑤ Cable RG-174/U, Cable length 450 mm, Load resistance = 1 MΩ, Load capacitance = 22 pF

⑥ The time required for the output to reach a stable level following a change in the control voltage from +0.8 V to +0.5 V.

⑦ No condensation

PHOTOMULTIPLIER TUBE MODULE H16722 SERIES

COOLING SPECIFICATIONS

Parameter	H16722 series	Unit
Cooling method	Thermoelectric cooling	—
Max. cooling temperature (ΔT) ^⑨	35	°C
Time to reach Max. cooling temperature ^⑨	Approx. 5	min

⑨ Input current to thermoelectric cooler = 2 A

Figure 1: Cathode radiant sensitivity

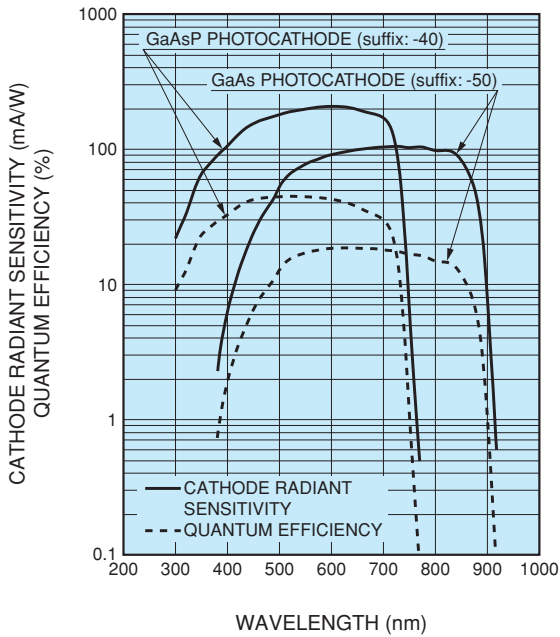


Figure 2: Gain

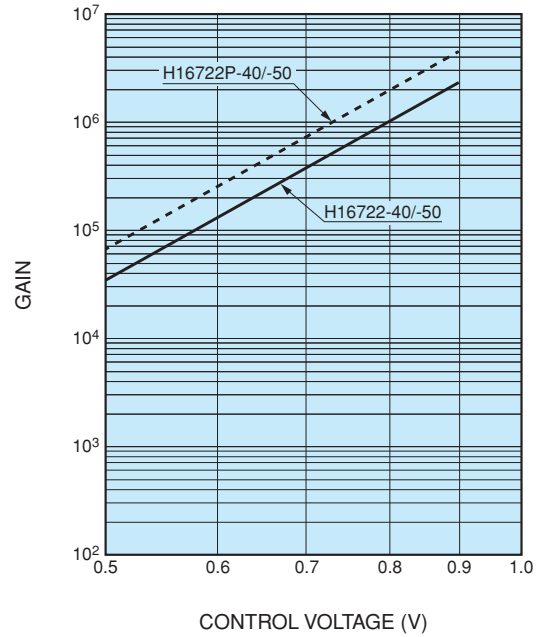


Figure 3: Block diagram

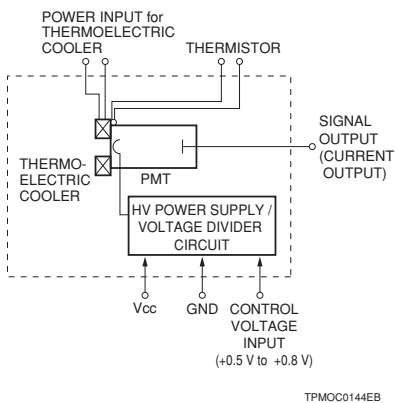
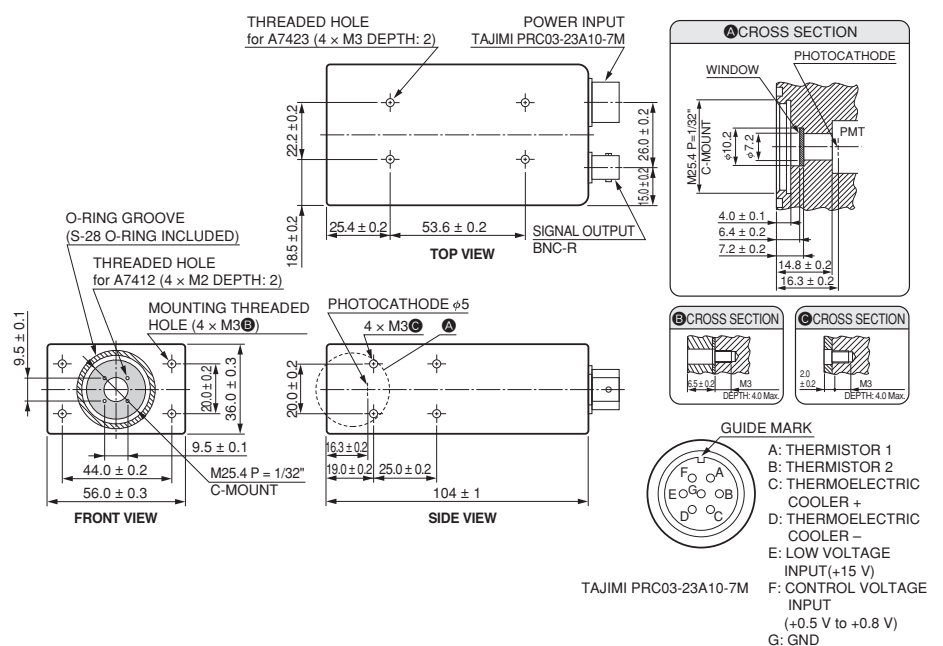
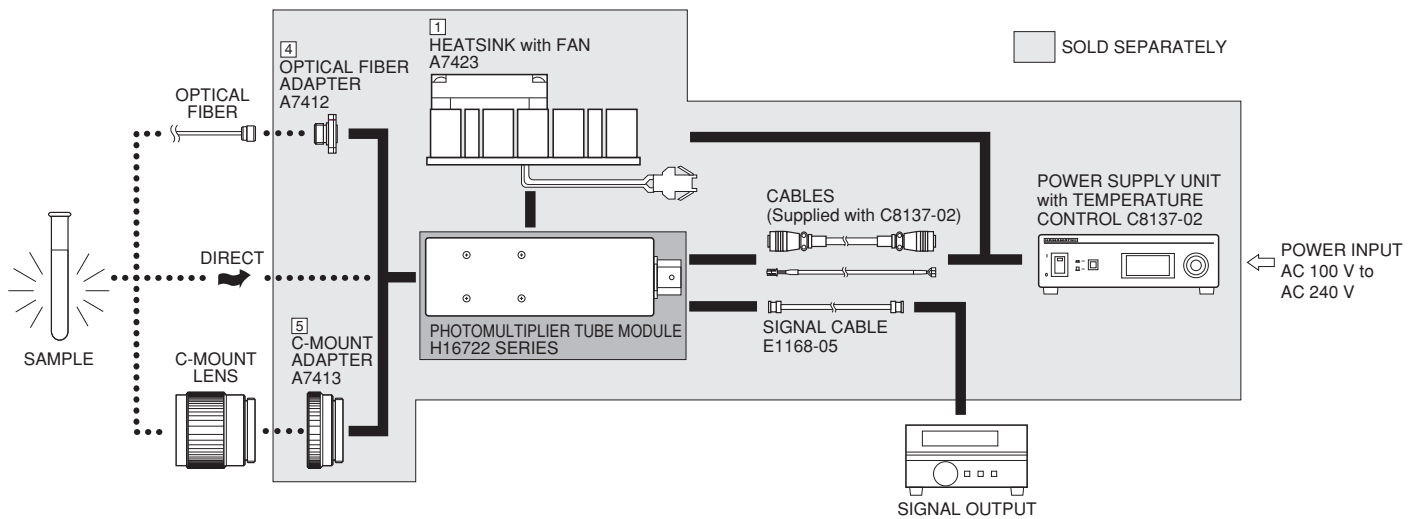


Figure 4: Dimensional outline (Unit: mm)



OPTIONS FOR H16722 SERIES



● Heatsink with Fan A7423

The temperature of the H16722 outer case rises due to the thermoelectric cooler housed in the case. The A7423 heatsink efficiently radiates away this heat to prevent a temperature rise in the H16722. The A7423 can be easily installed onto the H16722 with four M3 screws. Apply a heat conductive grease onto the joint surface shared by the H16722 and A7423.

Parameter	Value	Unit
Input voltage	12	V
Input current	During lock	140 mA
	During operation	90 mA
Operating voltage	10.2 to 13.8	V
Weight	128	g

● Signal cable E1168-05

This signal cable is terminated with a BNC connector for easily connecting the H16722 to external equipment.

● Optical fiber adapter (FC type) A7412

The A7412 is an FC type optical fiber connector that attaches to the light input window of the H16722. The A7412 can easily be secured in place with four M2 screws.

● C-mount adapter A7413

The A7413 mount adapter is used when a C-mount lens protruding 4 mm or more from the flange-back must be installed onto the H16722.

● Power supply unit with temperature control C8137-02

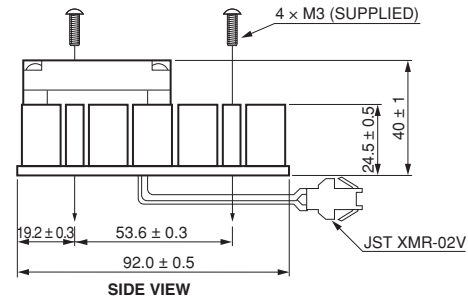
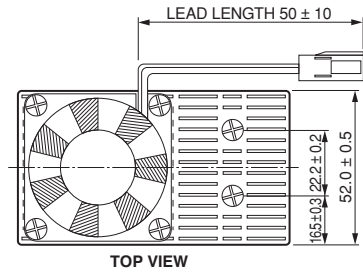
The C8137-02 is a power supply unit with a temperature control function. Just connecting to an AC source of 100 V to 240 V generates the output voltages for the thermoelectric cooler and the A7423 fan, needed for operating the H16722. The photomultiplier tube temperature can be maintained to 0 °C by monitoring the thermistor and regulating the output current for the thermoelectric cooler. Control voltage can be varied by a knob on the front panel.

Parameter	Value	Unit
Max. cooling temperature (ΔT)	35	°C
Setting cooling temperature (preset at factory)	0	°C
AC input voltage	100 to 240	V
Input voltage frequency	50 / 60	Hz
Power consumption	30	V·A
Main circuit output voltage	+15	V
Max. current for thermoelectric cooler	2.2	A
Output voltage for fan	12	V
Control voltage adjustment range	0 to +0.9	V
Weight	1.1	kg

PHOTOMULTIPLIER TUBE MODULE H16722 SERIES

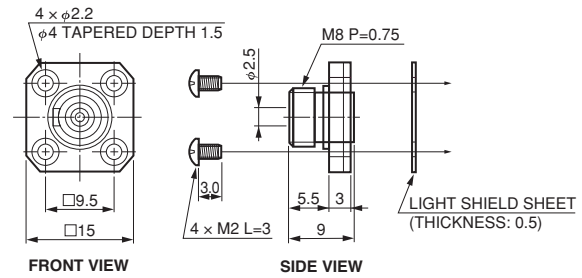
OPTIONS (Unit: mm)

●Heatsink with fan A7423



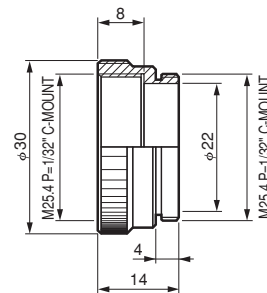
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●Optical fiber adapter (FC type) A7412



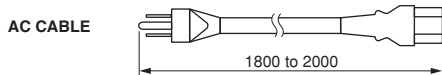
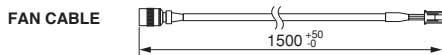
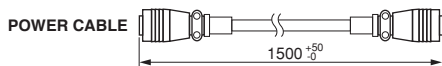
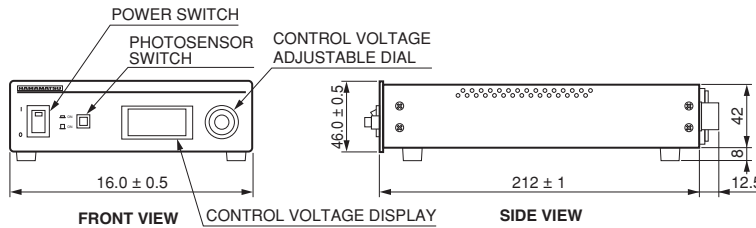
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●C-mount adapter A7413



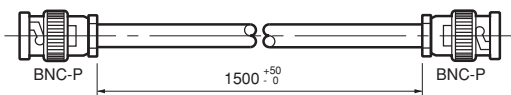
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●Power supply unit with temperature control C8137-02



TACCA0238EB

●Signal cable E1168-05



TACCA0148EA

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